

कॉस्मेटिक उद्योग के लिए  
मूँगफली का तेल — विशिष्टि

( पहला पुनरीक्षण )

Groundnut Oil for  
Cosmetic Industry — Specification

( First Revision )

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## FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards after the draft finalized by the Cosmetics Sectional Committee had been approved by the Petroleum, Coal and Related Products Division Council.

This standard was first published in 1985. The first revision has been taken up to keep pace with the latest technological developments. Now a days, the groundnut oil of new verities (with better intrinsic quality of groundnut oil) having higher oleic acid content is available in the Indian market. Due to which the oleic acid content of groundnut oil has increased and linoleic acid content has decreased, significantly affecting the iodine value of the oil. Therefore, in this revision, the iodine value range has been changed from '85–99' to '77–107'. Further, amendment No. 1 (July 2004) to the previous version has been incorporated in this revision. An optional requirement of Total Aflatoxin has been added as 25 ppb, max and is determined using High Performance Liquid Chromatography (HPLC).

The composition of the Committee responsible for formulation of this standard is given at Annex C.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values ( *revised* )'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Indian Standard*

**GROUNDNUT OIL FOR  
COSMETIC INDUSTRY — SPECIFICATION**

*(First Revision)*

## 1 SCOPE

**1.1** This standard prescribes the requirements and the methods of sampling and test for groundnut oil for cosmetic industry.

**1.2** For groundnut oil for edible purposes and for manufacture of *VANASPATI* and refined oil a separate standard, IS 544 : 2014 'Groundnut oil — Specification (third revision)' has been published.

## 2 REFERENCES

**2.1** The standards listed below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below.

IS No.	Title	
548 (Part 1) : 1964	Methods of sampling and test for oils and fats: Part 1 Sampling, physical and chemical tests (revised)	<b>4.1.1</b> <i>Type 1</i> — The groundnut oil shall be obtained from clean and sound groundnut ( <i>Arachis hypogea</i> Linn., fam. Leguminosae) or good quality groundnut cake by a process of expression or solvent extraction using solvent hexane conforming to IS 3470. The oil shall be refined by neutralisation with alkali, bleached with bleaching earth or activated carbon or both, and deodorised with steam. The oil shall be practically odourless or having a very mild odour characteristic of groundnut oil.
548 (Part 2) : 1976	Methods of sampling and test for oils and fats: Part 2 Purity test (third revision)	<b>4.1.2</b> <i>Type 2</i> — The groundnut oil shall be obtained from clean and sound groundnut ( <i>Arachis hypogea</i> Linn., fam. Leguminosae) by a process of expression. The oil shall have the characteristic odour of groundnut oil.
1448 (Part 21) : 2012/ ISO 2719 : 2016	Methods of test for petroleum and its products: Part 21 Determination of flash point — Pensky-Martens closed cup method (third revision)	<b>4.2</b> The groundnut oil shall be clear and free from rancidity, adulterants, sediment, suspended and other foreign matter, separated water and added colouring and flavouring substances.
3470 : 2017	Hexane, Food Grade — Specification (second revision)	<b>4.3 Admixture with Other Oils</b> — The groundnut oil shall be free from admixture with other oils when tested according to the methods prescribed in IS 548 (Part 2).
IS 16287 :2015/ ISO 16050 : 2003	Foodstuffs — Determination of aflatoxin B1, and the total content of aflatoxins B1, B2, G1 and G2 in cereals, nuts and derived products	<b>4.4</b> The groundnut oil shall not contain Total Aflatoxins, more than 25 µg/kg, when tested by the method prescribed in 16287 : 2015/ISO 16050 : 2003 Food stuffs — Determination of aflatoxin B1, and the total content of aflatoxins B1, B2, G1 and G2 in cereals, nuts and derived products. The test for Total Aflatoxin shall be performed if agreed to between the purchaser and the supplier.
		<b>4.5</b> The groundnut oil shall also comply with the requirements given in Table 1.

## 3 TYPES

The groundnut oil shall be of following two types:

- a) *Type 1* — Refined oil, and
- b) *Type 2* — Raw expeller oil.

## 4 REQUIREMENTS

### 4.1 Description

**4.1.1** *Type 1* — The groundnut oil shall be obtained from clean and sound groundnut (*Arachis hypogea* Linn., fam. Leguminosae) or good quality groundnut cake by a process of expression or solvent extraction using solvent hexane conforming to IS 3470. The oil shall be refined by neutralisation with alkali, bleached with bleaching earth or activated carbon or both, and deodorised with steam. The oil shall be practically odourless or having a very mild odour characteristic of groundnut oil.

**4.1.2** *Type 2* — The groundnut oil shall be obtained from clean and sound groundnut (*Arachis hypogea* Linn., fam. Leguminosae) by a process of expression. The oil shall have the characteristic odour of groundnut oil.

**4.2** The groundnut oil shall be clear and free from rancidity, adulterants, sediment, suspended and other foreign matter, separated water and added colouring and flavouring substances.

**4.3 Admixture with Other Oils** — The groundnut oil shall be free from admixture with other oils when tested according to the methods prescribed in IS 548 (Part 2).

**4.4** The groundnut oil shall not contain Total Aflatoxins, more than 25 µg/kg, when tested by the method prescribed in 16287 : 2015/ISO 16050 : 2003 Food stuffs — Determination of aflatoxin B1, and the total content of aflatoxins B1, B2, G1 and G2 in cereals, nuts and derived products. The test for Total Aflatoxin shall be performed if agreed to between the purchaser and the supplier.

**4.5** The groundnut oil shall also comply with the requirements given in Table 1.

**Table 1 Requirements for Groundnut Oil for Cosmetic Industry**  
( *Clauses 4.4* )

Sl No.	Characteristic	Requirements		Method of Test, Ref to
		Type 1	Type 2	
(1)	(2)	(3)	(4)	(5)
i)	Moisture and insoluble impurities, percent by mass, <i>Max</i>	0.10	0.20	<b>5 and 6</b> of IS 548 (Part 1)
ii)	Colour in a 1" cell on the Lovibond scale, expressed as (Y + 5R) not deeper than	3	15	<b>13</b> of IS 548 (Part 1)
iii)	Acid value, <i>Max</i>	0.5	2.0	<b>7</b> of IS 548 (Part 1)
iv)	Flash point, Pensky-Martens (closed), °C, <i>Min</i>	250	—	IS 1448 (Part 2)
v)	Peroxide value, meq/kg, <i>Max</i>	5.0	10.0	Annex A
vi)	Refractive index at 40 °C	1.4620 to 1.4640		<b>10</b> of IS 548 (Part 1)
vii)	Specific gravity at 30°/30 °C	0.909 to 0.913		<b>11</b> of IS 548 (Part 1)
viii)	Saponification value	188 to 196		<b>15</b> of IS 548 (Part 1)
ix)	Iodine value (Wij's)	77 to 107		<b>14</b> of IS 548 (Part 1)
x)	Unsaponifiable matter, percent by mass, <i>Max</i>	1.0		<b>8</b> of IS 548 (Part 1)
xi)	Bellier turbidity temperature test, °C	38 to 41		<b>13</b> of IS 548 (Part 2)
xii)	Test for rancidity	To pass the test		Annex B

## 5 PACKING AND MARKING

**5.1** The groundnut oil shall be supplied in suitable well-closed containers, which do not deteriorate the product, in quantities, as agreed to between the purchaser and the supplier.

**5.2** The packages shall be securely closed and legibly marked with the following information:

- Name and type of the material;
- Manufacturer's name and/or his recognised trade-mark, if any;
- Net quantity of groundnut oil in the container;
- Batch number, month and year of manufacture;
- Caution 'NOT FOR DIRECT EDIBLE CONSUMPTION' (either printed on the label affixed to the container or lithographed or stenciled thereon with indelible ink) in a type size of not less than 50 mm to be marked; and
- Any other information required by statutory authorities.

### 5.2.1 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity

assessment schemes under the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

## 6 SAMPLING

**6.1** Representative samples of the groundnut oil shall be drawn as prescribed under **3** of IS 548 (Part 1).

**6.2** Tests for all the requirements shall be carried out on a composite sample.

**6.3** The material shall be taken to have conformed to this standard if the composite sample passes all the tests. The test for total aflatoxin is an optional test and shall be performed if agreed to between the purchaser and the supplier.

## 7 QUALITY OF REAGENTS

Unless specified otherwise, pure chemicals and distilled water [see IS 1070 : 1992 Reagent grade water — Specification (*third revision*)] shall be employed in the tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the result of analysis.

## ANNEX A

[ *Table 1, Sl No. (v)* ]

### DETERMINATION OF PEROXIDE VALUE

#### **A-1 REAGENTS**

##### **A-1.1 Glacial Acetic Acid**

##### **A-1.2 Chloroform**

##### **A-1.3 Saturated Potassium Iodide Solution**

**A-1.4 Sodium Thiosulphate** — 0.01 N, accurately standardized.

#### **A-2 PROCEDURE**

Weigh  $5.0 \pm 0.5$  g of the sample in a 250 ml glass-stoppered conical flask. Add 30 ml of a mixture of 3 volumes glacial acetic acid and 2 volumes of chloroform. Swirl until dissolved, and add 0.5 ml of saturated potassium iodide solution. Allow to stand for exactly 1 min, with occasional shaking, add 30 ml of water. Titrate gradually, with continuous and vigorous shaking, with 0.01 N sodium thiosulphate solution until the yellow colour almost disappears.

Add 0.5 ml of starch solution, continue the titration, shaking vigorously until the blue colour just disappears (*A*). Carry out a blank determination under the same condition without adding any sample (*B*). The volume of 0.01 N sodium thiosulphate in the blank determination must not exceed 0.1 ml.

#### **A-3 CALCULATION**

Calculate the peroxide value from the expression:

$$\text{Peroxide value (meq/kg)} = \frac{(A-B)N}{M} \times 1000$$

where

*A* = volume in ml, of sodium thiosulphate solution required for titration;

*B* = volume in ml, of sodium thiosulphate solution required for blank titration;

*N* = normality of sodium thiosulphate solution; and

*M* = mass in g, of the sample.

## ANNEX B

[ *Table 1, Sl No. (xii)* ]

### TEST FOR RANCIDITY

#### **B-1 REAGENTS**

**B-1.1 Phloroglucinol Solution** — Dissolve 0.1 g of phloroglucinol in 100 ml of diethyl ether.

#### **B-2 PROCEDURE**

Shake 10 ml of the material, melt if necessary, with 10 ml of concentrated hydrochloric acid and 10 ml of phloroglucinol solution. Shake for 1 min.

**B-2.1** The material shall be taken to have passed the test if no pink colour develops.

## ANNEX D

(Foreword)

## COMMITTEE COMPOSITION

Cosmetics Sectional Committee, PCD 19

<i>Organization</i>	<i>Representative(s)</i>
Drugs Controller General (INDIA), Delhi	DR V. G. SOMANI ( <b>Chairman</b> )
All India Cosmetic Manufacturers Association, Mumbai	MS KAJAL ANAND DR VIRENDRA V. CHAVAN ( <i>Alternate</i> )
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The Himalaya Drug Company, Bengaluru	DR SUNDARAM RAMACHANDRAN DR KRISHNAN SRIRAMAN ( <i>Alternate</i> )
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